

EXECUTIVE SUMMARY

BACKGROUND

Tucson International Airport is owned by the City of Tucson and operated by the Tucson Airport Authority. The Airport is at the southern edge of the City, about 8 miles southeast of downtown. Primary access to the Airport is via Valencia Road and South Tucson Boulevard.

The previous Master Plan for the Airport was prepared in 1987 for the planning period through 2005. Since 1987, the passenger terminal building has been expanded by approximately 50,000 square feet, roadway access to the terminal building has been upgraded, general aviation Runway 11R-29L has been improved, and about 1,860 acres of land have been acquired. All of these projects are consistent with the recommendations in the 1987 Master Plan.

The number of passengers enplaning (boarding an aircraft) at the Airport, after reaching a peak of 1,576,439 in 1987, decreased each year through 1991 to a total of 1,221,546. The number of enplaned passengers increased and reached a record high of 1,638,342 in 1994. This record was surpassed in 1995, when 1,720,537 passengers were enplaned at the Airport. Similarly, the amount of air cargo (freight and mail) enplaned at the Airport reached a record high of 30,523,567 pounds in 1995.

The decrease in the number of enplaned passengers at the Airport in the late 1980s and early 1990s was the result of economic and political conditions and lower airfares offered from Phoenix Sky Harbor International Airport. The effects of the national and local recessions and the Persian Gulf war caused air travel demand to decrease. In addition, airfares offered in many markets from Phoenix were often lower than fares offered from Tucson in those same markets. This difference resulted in some passengers driving or using shuttle services to Phoenix to take advantage of the lower airfares.

The recent fast growth in the number of passengers enplaning at the Airport is the result of (1) a strongly expanding economy in the Tucson region, and (2) the introduction of low-fare service in late 1993 by airlines such as Morris Air (acquired by Southwest Airlines in October 1994) and Reno Air, which has reduced the difference in airfares offered from Tucson and Phoenix. The increase in the amount of air cargo enplaned at the Airport is the result of an expanding economy and improved air cargo service. The passage and ongoing implementation of the North American Free Trade Agreement (NAFTA) have potentially contributed further to air cargo growth, although its effects cannot be quantified until more data are available.

In 1994, the Authority decided to revalidate the Airport Master Plan to (1) address the recent increases in passenger traffic and cargo volumes, (2) review the recommendations from the previous plan to ensure their continued applicability, and

(3) determine the phasing and timing of the various recommended projects to accommodate demand. In January 1995, the Authority retained Leigh Fisher Associates to assist in preparing the Master Plan Update for Tucson International Airport. A Technical Advisory Committee (TAC), comprised of individuals representing Airport users, key local agencies, and business organizations, was formed to assist with the Master Plan Update effort, along with the ongoing Long-Range Planning Council (LRPC), comprised of Tucson Airport Authority members.

GOALS AND OBJECTIVES

On the basis of a review of previous master plans for the Airport and discussions with LRPC and TAC members, the Tucson Airport Authority Board of Directors, Airport tenants, and Authority staff, the overall goal and objectives for the Master Plan Update were established.

Overall Goal

In recognition of the role of the Airport in supporting business and tourism in Tucson, the overall goal of the Master Plan Update is to provide for the continued development of the Airport that is "human" in scale, recognizing that air travel passengers—including those traveling on air carrier, charter, and business aircraft—are the primary *customers*. Other Airport customers include air cargo service providers, the Arizona Air National Guard (AANG), and general aviation operators. Facilities should be convenient and easy to use, comfortable, affordable, and aesthetically pleasing. The Airport's southwestern location and the regional art, architecture, and landscape should be clearly reflected in the continuing development of the passenger terminal complex and other major structures on the Airport site.

Objectives

The following seven objectives support the overall goal of the Master Plan Update:

1. Ensure that the Airport can continue to accommodate the aviation demand in the region by identifying short- and long-term facility requirements consistent with the safe, efficient, and financially and environmentally sound operation and development of the Airport through its ultimate configuration.
2. Protect and enhance the investment of public funds.
3. Create a plan that provides opportunities for aviation- and nonaviation-related development to maximize revenues to the Authority for use in financing Airport improvements.

4. Ensure that the recommendations in the Update are sufficiently flexible to allow for change and to accommodate new technologies, such as those affecting navigational aids, aircraft designs and capabilities, and ground transportation.
5. Ensure passenger comfort and convenience by maintaining level-of-service criteria including, but not limited to, such factors as walking distances within the terminal, amount and variety of concessions provided, and amount of passenger holdroom space at each airline gate.
6. Achieve and maintain maximum compatibility between the Airport and its environs; in particular, ensure that the areas of highest aircraft noise exposure are within the Airport boundary.
7. Properly determine priorities for Airport projects (including projects and programs mandated by environmental laws), project phasing for capital budget purposes, and allocations of financial resources to ensure that required facilities are in place when needed.

EXISTING AIRPORT FACILITIES

Tucson International Airport currently occupies about 5,530 acres at an elevation of 2,641 feet above mean sea level (MSL). The primary Airport facilities are: the airfield, aviation, the passenger terminal complex, air cargo and air mail facilities, general aviation facilities, and other building areas (e.g., military, industrial, and government).

The existing airfield consists of three active runways, as described in Table S-1.

Table S-1
AIRPORT RUNWAYS

| Runway | Orientation | Pavement length (feet) | Pavement width (feet) | Pavement condition |
|---------------------|---------------------|------------------------|-----------------------|--------------------|
| 11L-29R (primary) | Northwest-southeast | 10,994 | 150 | Excellent |
| 11R-29L (temporary) | Northwest-southeast | 9,118 (a) | 75 | Fair (b) |
| 3-21 (crosswind) | Northwest-southeast | 7,000 (c) | 150 | Fair (b) |

(a) Runway 11R has a displaced threshold of 2,118 feet, leaving a usable landing length of 7,000 feet.

(b) Reconstruction of Runway 3-21 has been approved for 1997; reconstruction of Runway 11R-29L has been approved for 1998.

(c) Runway 3 has a displaced threshold of 841 feet, leaving a usable landing length of 6,159 feet.

Source: Urban Engineering, Inc.

ANNUAL AVIATION DEMAND FORECASTS

Forecasts of annual aviation demand for Tucson International Airport through 2015 are discussed below. The aviation demand forecasts are assumed to be unconstrained and, therefore, do not include specific assumptions regarding the future capacity or facilities at the Airport. These forecasts are based on the analysis of historical and projected regional development trends.

Key Factors Affecting Future Airline Traffic

Key factors that will affect future airline traffic at the Airport are as follows:

1. The growth in the population and economy of the Airport service region
2. National and international economic and political conditions
3. Airline service and fares
4. Availability and price of aviation fuel

Assumptions

The annual aviation demand forecasts are based on the assumption that future growth in aviation activity at the Airport will result primarily from growth in the population and general economy of Pima County and the State of Arizona. Accordingly, the forecasts are based on analyses of historical and projected population and economic indicators for Pima County, and historical airline traffic at the Airport. As discussed earlier, the projected population and employment growth, the economic diversification of the region, and the potential beneficial effects of NAFTA suggest that aviation demand to and from Tucson will increase during the forecast period.

Recent and potential developments in the national economy and the air transportation industry and their effects on aviation demand at the Airport were also considered, as noted above in the key factors affecting future airline traffic, as well as recent aviation demand forecasts for the nation as a whole produced by the FAA.

In general, it was assumed that future growth in airline traffic at the Airport would not be constrained by the availability of aviation fuel, limitations in airline service at the Airport, limitations in the capacity of the air traffic control system, or government policies or actions that restrict growth.

Aviation Forecasts

Aviation demand forecasts were prepared for enplaned passengers, enplaned cargo, airline aircraft departures, and aircraft operations by type for the Airport through 2015. Future growth in aviation activity at the Airport is dependent on (1) economic growth internationally (especially in Mexico), nationally, and in the region served by the Airport, and (2) the airline service and fares offered from the Airport to domestic and international destinations, especially in comparison with those offered from Phoenix Sky Harbor International Airport.

Base forecasts were prepared and reflect the assumptions considered most likely, or expected, from a range of possible alternatives. Because of the inherent uncertainties regarding future events affecting aviation demand in Tucson, alternative high and low forecasts were also developed.

Exhibit S-1 shows the base and alternative high and low forecasts of total enplaned passengers.

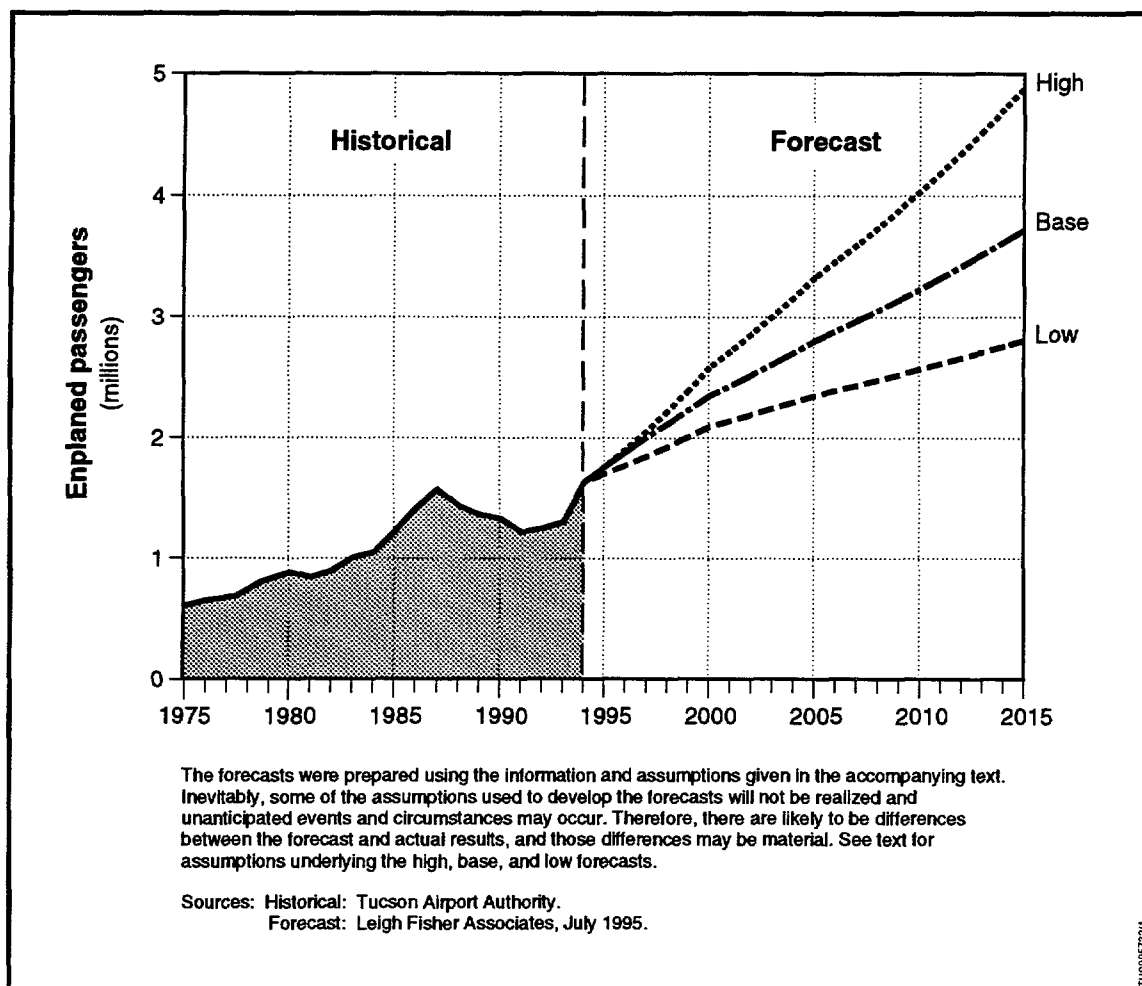


Exhibit S-1. Historical and Forecast Enplaned Passengers

Passenger activity at the Airport decreased between 1987 and 1991 in part because of (1) the lower airline fares available from Phoenix and (2) the national and local economic recessions. In the future, airline passengers in the Tucson Airport service region could again drive to Phoenix if the difference in airfares becomes significant.

In addition, low-fare airlines, such as Southwest, are offering increasing levels of point-to-point service in traditionally under-served markets. In the Tucson market, the expansion of low-fare airline service has resulted in fare competition, lower fares, and increases in the number of enplaned passengers at the Airport.

Uncertainties regarding the economy, relative fare levels, and service to Mexico, coupled with the dynamic role of low-fare airlines, raise uncertainties regarding future aviation demand at the Airport. To address these uncertainties, the forecasts shown in Table S-2 were developed to reflect a range of potential economic scenarios.

High Forecast. For the high forecast alternative, it was assumed that both domestic and international airline service would increase faster than in the base forecast.

Low Forecast. For the low forecast alternative, it was assumed that domestic and international airline service would increase only moderately over the forecast period.

Under the low forecast alternative, the number of enplaned passengers forecast for 2015 in the base forecast would be realized 16 years later, in 2031.

PLANNING ACTIVITY LEVELS

The purpose of preparing long-term forecasts, as presented above, is to assist in the determination of future land and facility requirements to meet the aviation demands of the Airport service region. Increased aviation demand at an air carrier airport results in increased requirements for airfield facilities; passenger terminal facilities; automobile parking for passengers, visitors, and employees; general aviation facilities, including fixed based operations; air cargo facilities; and other aviation- and nonaviation-related development that requires proximity to the Airport.

Over the years, airport master plans and aviation demand forecasts have been used to develop year-based, short-, medium-, and long-range capital improvement plans and programs. Historically, facility requirements have been based on activity

Table S-2

BASE, HIGH, AND LOW AVIATION DEMAND FORECASTSTucson International Airport
1994-2015

The forecasts presented in this table were prepared using the information and assumptions described in the accompanying text. Inevitably, some of the assumptions used to develop the forecasts will not be realized and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between the forecast and actual results, and those differences may be material.

| | Historical 1994 | Base forecast | | | High forecast | | | Low forecast | | |
|-----------------------------|--------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|------------------|-------------------|
| | | 2000 | 2005 | 2015 | 2000 | 2005 | 2015 | 2000 | 2005 | 2015 |
| Enplaned passengers | | | | | | | | | | |
| Domestic | 1,583,418 | 2,229,000 | 2,622,000 | 3,422,000 | 2,403,000 | 3,009,000 | 4,327,000 | 2,004,000 | 2,234,000 | 2,670,000 |
| International | | | | | | | | | | |
| Air carrier | 44,051 | 87,000 | 130,000 | 212,000 | 112,000 | 180,000 | 322,000 | 64,000 | 85,000 | 104,000 |
| Commuter | <u>10,873</u> | <u>36,000</u> | <u>57,000</u> | <u>93,000</u> | <u>73,000</u> | <u>144,000</u> | <u>246,000</u> | <u>26,000</u> | <u>34,000</u> | <u>41,000</u> |
| | <u>54,924</u> | <u>123,000</u> | <u>187,000</u> | <u>305,000</u> | <u>185,000</u> | <u>324,000</u> | <u>568,000</u> | <u>90,000</u> | <u>119,000</u> | <u>145,000</u> |
| Total | 1,638,342 | 2,352,000 | 2,809,000 | 3,727,000 | 2,588,000 | 3,333,000 | 4,895,000 | 2,094,000 | 2,353,000 | 2,815,000 |
| Average annual increase | | 6.2% | 3.6% | 2.9% | 7.9% | 5.2% | 3.9% | 4.2% | 2.4% | 1.8% |
| Enplaned cargo (pounds) | | | | | | | | | | |
| Freight | 16,498,523 | 31,503,000 | 38,114,000 | 50,860,000 | 41,923,000 | 55,760,000 | 89,502,000 | 25,340,000 | 29,248,000 | 34,960,000 |
| Mail | <u>6,631,169</u> | <u>8,826,000</u> | <u>10,133,000</u> | <u>12,596,000</u> | <u>10,523,000</u> | <u>13,114,000</u> | <u>17,624,000</u> | <u>8,151,000</u> | <u>9,088,000</u> | <u>10,863,000</u> |
| Total | 23,129,692 | 40,329,000 | 48,247,000 | 63,456,000 | 52,446,000 | 68,874,000 | 107,126,000 | 33,491,000 | 38,336,000 | 45,823,000 |
| Average annual increase | | 9.7% | 3.7% | 2.8% | 14.6% | 5.6% | 4.5% | 6.4% | 2.7% | 1.8% |
| Airline aircraft departures | | | | | | | | | | |
| Passenger service | | | | | | | | | | |
| Domestic | 23,191 | 30,100 | 33,300 | 40,200 | 32,400 | 38,300 | 50,800 | 27,000 | 28,400 | 31,300 |
| International | | | | | | | | | | |
| Air carrier | 729 | 1,300 | 1,900 | 2,800 | 1,700 | 2,600 | 4,300 | 1,000 | 1,200 | 1,400 |
| Commuter | <u>1,843</u> | <u>5,100</u> | <u>6,900</u> | <u>8,700</u> | <u>10,300</u> | <u>17,500</u> | <u>22,900</u> | <u>3,700</u> | <u>4,100</u> | <u>3,800</u> |
| Subtotal | 25,763 | 36,500 | 42,100 | 51,700 | 44,400 | 58,400 | 78,000 | 31,700 | 33,700 | 36,500 |
| All-cargo service | <u>1,102</u> | <u>1,800</u> | <u>2,100</u> | <u>2,600</u> | <u>2,400</u> | <u>3,100</u> | <u>4,600</u> | <u>1,400</u> | <u>1,600</u> | <u>1,700</u> |
| Total | 26,865 | 38,300 | 44,200 | 54,300 | 46,800 | 61,500 | 82,600 | 33,100 | 35,300 | 38,200 |
| Aircraft operations | | | | | | | | | | |
| Air carrier | 46,557 | 64,500 | 72,400 | 88,500 | 70,900 | 85,400 | 115,900 | 57,100 | 60,600 | 66,800 |
| Air taxi/commuter | 18,901 | 29,800 | 35,400 | 42,300 | 39,400 | 55,300 | 69,400 | 25,300 | 27,900 | 30,200 |
| General aviation (a) | 146,849 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 |
| Military | <u>39,267</u> | <u>40,000</u> | <u>40,000</u> | <u>40,000</u> | <u>40,000</u> | <u>40,000</u> | <u>40,000</u> | <u>40,000</u> | <u>40,000</u> | <u>40,000</u> |
| Total | 251,574 | 284,300 | 297,800 | 320,800 | 300,300 | 330,700 | 375,300 | 272,400 | 278,500 | 287,000 |

(a) The forecast for the number of general aviation operations to remain fairly constant over the planning period is based on the assumptions provided in this report and in no way implies that the Tucson Airport Authority intends to limit general aviation activity at Tucson International Airport.

Sources: Historical: Tucson International Airport records.

Forecast: Leigh Fisher Associates, July 1995.

forecasts to occur 5, 10, and 20 years into the future, as required by the FAA. Year-based forecasts are necessary for determining short-term (typically 5-year) improvements to be included in capital improvement and financial plans. However, because so many variables can affect the achievement of a forecast for a specific year, the value of such forecasts has become questionable as the primary basis for identifying when improvements might be needed, particularly for long-range airport planning.

Aviation activity at Tucson International Airport has been affected by these variables. For example, the numbers of enplaned passengers and aircraft operations at the Airport varied significantly between 1985 and 1994 (the base year for the forecasts presented in Table S-2). Although the general trend is that both of these demand components have increased over the long-term and are expected to continue to increase in the future, it is interesting to note that, from 1987 to 1992, the number of enplaned passengers *decreased* from 1.58 million to 1.25 million. This decrease was primarily a result of the national and local recessions and lower air-fares offered from Phoenix, which caused some passengers who would otherwise have flown from Tucson International Airport to use Phoenix Sky Harbor International Airport instead.

The number of enplaned passengers at Tucson International Airport increased about 31% between 1992 and 1994, numbering about 1.64 million in 1994. The number of enplaned passengers increased further to about 1.72 million in 1995. The introduction of service by low-fare carriers and strong economic growth have been the major contributors to this increase in the number of passengers enplaned at the Airport. Such fluctuations are difficult to predict years in advance.

Therefore, for this Master Plan Update, the Authority has used a strategic planning approach, in which *planning activity levels* (PALs) are used as a basis for long-range planning and recommended capital improvements, rather than the traditional 20-year look-ahead approach. The potential ultimate development of the Airport is addressed in the Master Plan Update in terms of PALs, and recommendations for the development of land uses and facilities are based on specific demand components that trigger the need for such development, rather than planning for certain conditions (such as the number of enplaned passengers or aircraft operations) to occur in a specific year.

PALs 1 through 4 presented in Table S-3 were established for the following demand components: (1) enplaned passengers, (2) cargo, (3) aircraft operations. Although some dependencies exist between certain components, each represents a discrete element of demand that alone or in combination with other demand components triggers the need for facility development, and the timing of achievement of the PALs may be different for each of the demand components. For example, if the number of enplaned *domestic* passengers increases at a rate consistent with the

Table S-3
PLANNING ACTIVITY LEVELS AND FACILITY REQUIREMENTS
Tucson International Airport

| Demand component: | 1995 | Planning activity levels | | | |
|---|---------------|---|---------------------|---------------------|---------------------|
| | | 1 | 2 | 3 | 4 |
| Enplaned passengers | 1,720,537 | 2,000,000 | 2,500,000 | 3,000,000 | 4,000,000 |
| Cargo (pounds) | 65,647,476 | 75,249,000 | 101,135,000 | 121,138,000 | 160,363,000 |
| Annual aircraft operations | | | | | |
| Air carrier | 46,181 | 55,700 | 67,100 | 75,800 | 95,000 |
| Air taxi/commuter | 16,089 | 24,400 | 31,600 | 36,800 | 45,400 |
| General aviation (a) | 144,702 | 150,000 | 150,000 | 150,000 | 150,000 |
| Military | <u>36,336</u> | <u>40,000</u> | <u>40,000</u> | <u>40,000</u> | <u>40,000</u> |
| Total | 243,308 | 270,100 | 288,700 | 302,600 | 330,400 |
| Airfield: | 1995 | Requirements for planning activity levels | | | |
| | | 1 | 2 | 3 | 4 |
| Air carrier runways (11-29) | | | | | |
| Number | 1 | 1 | 1 | 2 (b) | 2 (b) |
| Length (feet) | 10,994 | 11,000 | 11,000 | 11,000 | 11,000 |
| General aviation runways (11-29) | | | | | |
| Number | 2 (c) | 2 (c) | 2 (c) | 2 (b) | 2 (b) |
| Length (feet) | 9,118 | 9,118 | 9,118 | 11,000 | 11,000 |
| Crosswind runways (3-21) | | | | | |
| Number | 1 | 1 | 1 | 1 | 1 |
| Length (feet) | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 |
| Passenger terminal complex: | | | | | |
| Air carrier aircraft gates | | | | | |
| Widebody aircraft (up to DC-10/MD-11) (d) | 5 | 5 | 5 | 5 | 5 |
| Narrowbody aircraft (up to B-757) | <u>17</u> | <u>20-25</u> | <u>22-27</u> | <u>24-29</u> | <u>29-34</u> |
| Total | 22 | 25-30 | 27-32 | 29-34 | 34-39 |
| Commuter aircraft parking positions (e) | 3 | 5 | 6 | 7 | 8 |
| Terminal building and concourse area (sq ft) | 320,000 | 500,000- 600,000 | 540,000- 640,000 | 580,000- 680,000 | 680,000- 780,000 |
| Public automobile parking spaces | | | | | |
| Short-term | 576 | 750 | 940 | 1,310 | 2,000 |
| Long-term | 4,018 | 4,250 | 5,310 | 6,190 | 8,000 |
| Cargo, general aviation, and maintenance area: | | | | | |
| Air cargo area (acres) | 15 | 15 | 20 | 25 | 30 |
| General aviation area (acres) (f) | 87 | 90 (a) | 90 (a) | 90 (a) | 90 (a) |
| Airport maintenance (acres) | 4 | 10 | 10 | 10 | 10 |

- (a) The forecast of general aviation operations and resulting requirements in no way imply that the Tucson Airport Authority intends to restrict general aviation activity at Tucson International Airport.
- (b) The second air carrier runway would also accommodate general aviation aircraft operations. The existing general aviation runway would be converted back to a taxiway. The requirement is for a total of two parallel runways (11-29), each accommodating both air carrier and general aviation operations.
- (c) Includes the air carrier runway and an existing taxiway used as a general aviation runway.
- (d) The existing widebody gates accommodate aircraft up to and including DC-10s. Future requirements are to accommodate aircraft up through MD-11s.
- (e) Commuter aircraft can be accommodated in separate parking positions or at air carrier aircraft gates. Three or four commuter aircraft can typically be accommodated on the apron associated with one air carrier aircraft gate.
- (f) Excludes the Learjet area, which is a specialized general aviation facility.

Sources: 1995—Tucson Airport Authority and Federal Aviation Administration.
Planning activity levels—Leigh Fisher Associates, March 1996.

Taken from Tables 4-2, 4-3, and 4-4, Committee Review Draft, *Master Plan Update, Tucson International Airport*, September 1996.

"base" forecasts for the Airport, the numbers of domestic passengers associated with each PAL would be expected to be achieved during the following time frames:

- 1,910,000 (PAL 1): 1996 to 1998
- 2,357,000 (PAL 2): 1999 to 2003
- 2,789,000 (PAL 3): 2004 to 2010
- 3,673,000 (PAL 4): 2011 to 2020

On the other hand, if the number of enplaned *international* passengers increases at a rate consistent with the "low" forecasts, the number of enplaned international passengers associated with each PAL would be expected to be achieved during the following time frames:

- 90,000 (PAL 1): 1998 to 2004
- 143,000 (PAL 2): 2010 to 2020
- 211,000 (PAL 3): beyond 2020
- 327,000 (PAL 4): beyond 2020

FACILITY REQUIREMENTS

The advantage of identifying PALs for individual demand components is that the need to develop specific facilities can be based on the achievement of levels of certain types of activity rather than the achievement of overall traffic levels. Rapid growth in one demand component only triggers the development of those facilities needed to accommodate activity associated with that component. For example, increased cargo demand, such as that caused by the development of a cargo hub, would trigger the development of new cargo facilities—the need for which is based on the total weight of cargo shipped through the airport. If development of the hub results in significant increases in annual aircraft operations, particularly during peak hours, it may also trigger new runway development, the need for which is based on the number of annual and peak-hour aircraft operations at the airport.

The PALs presented in Table S-3 represent activity levels that could be achieved within the 20-year master planning horizon. However, it is also important to consider potential demand beyond that period to identify and preserve land for the ultimate development of the Airport. For example, the number of total operations and types of operations are used to determine the number and length of runways required at the Airport through PAL 4. After PAL 3 is achieved, it is likely that additional airfield development will be required. Therefore, the ultimate plan for the Airport will include facilities that may not be needed for 30 or more years. However, acquisition of the land to accommodate these facilities as the land

becomes available preserves the Authority's ability to provide the facilities when needed. Exhibit S-2 depicts the long-term runway requirements.

Table S-3 summarizes the airfield and other facility requirements through PAL 4 and the associated demand components that trigger the need for airfield development. Annual and peak-hour aircraft operations are the components that trigger the need for runway and associated taxiway development. The numbers of aircraft operations are, in turn, dependent on the number of enplaned passengers, amount of cargo handled at the Airport, and numbers of general aviation and military operations. On the basis of a review of projected capacity and delay statistics and a comparison of projected operations with the estimated annual service volume (ASV) for the Airport, an additional air carrier runway parallel to Runway 11L-29R will need to be in place by the time the number of annual aircraft operations reaches that associated with PAL 3. ASV is a measure of the number of operations that can occur at an airport without significant delay.

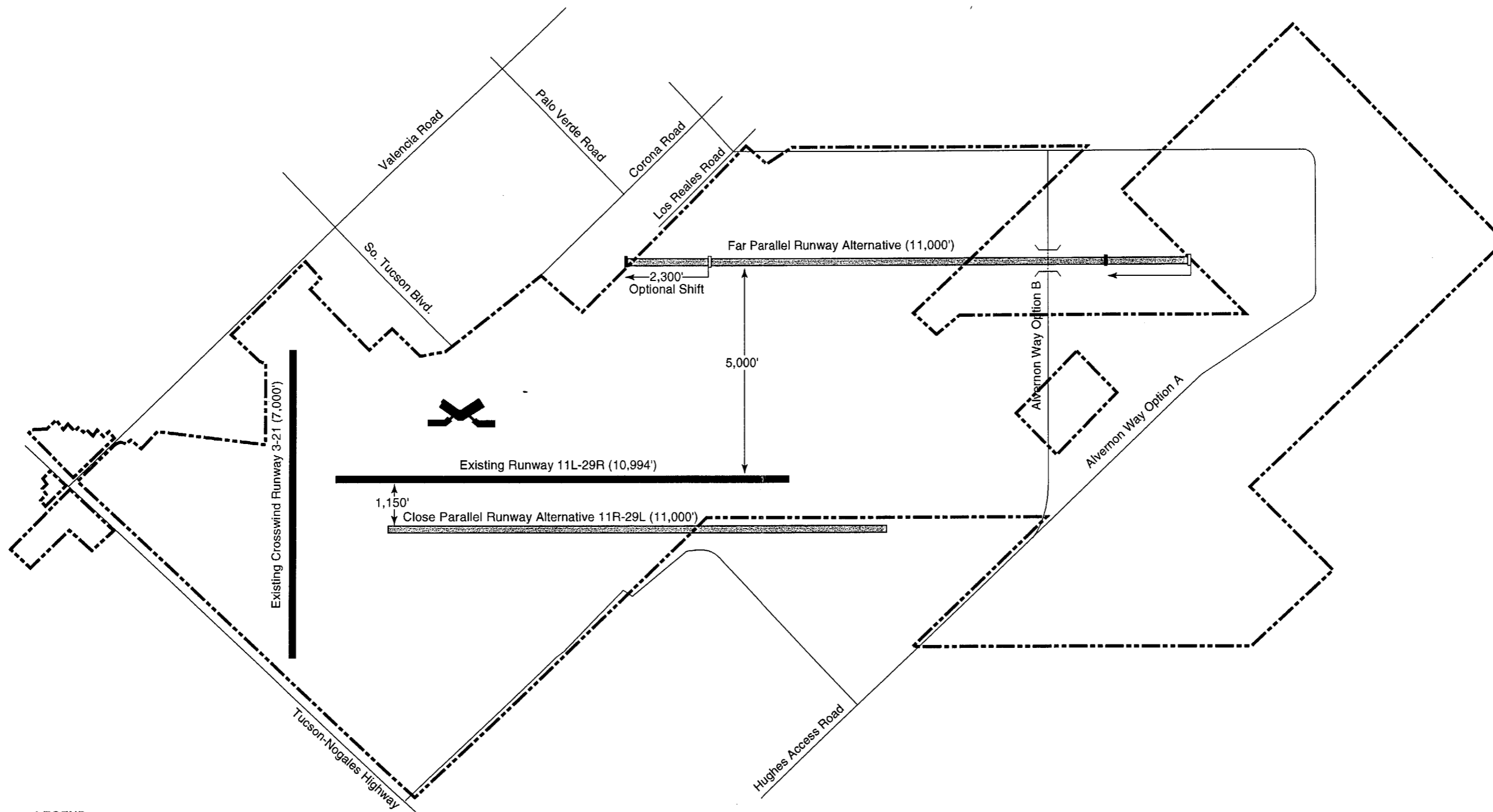
A runway capacity and annual aircraft delay analysis was also conducted to determine whether it would be beneficial for the centerline-to-centerline spacing between existing Runway 11L-29R and the new parallel runway to be sufficient to accommodate simultaneous aircraft landings in all weather conditions.* On the basis of anticipated future numbers of annual operations and aircraft schedules, it was concluded that it is not necessary to provide for simultaneous landings in poor weather conditions, particularly considering that these conditions occur less than 1%** of the time in Tucson. On the basis of cost and minimal difference in capacity, it was determined that the first new runway to be built should be the close parallel to the southwest.

LONG-RANGE LAND USE CONCEPT ALTERNATIVES

At most airports, the locations of existing and future airfield facilities most strongly influence land use planning decisions because these facilities occupy the greatest amount of land and the requirements for runway location and orientation are less flexible than for other facilities. However, the opposite is possible at Tucson International Airport—the unique opportunity exists to place more of an emphasis on land use planning decisions that may eventually influence decisions regarding the location and phasing of future airfield facilities. After a review of the airfield requirements and the comparison of the close and far parallel runway concepts described above, Authority staff decided to consider land use planning concepts before developing final runway locations and phasing plans for future airfield development. As anticipated, the overall concept for the ultimate airfield has not

*The minimum distance between parallel runways for simultaneous aircraft landings in poor weather conditions is 4,300 feet considering (1) current FAA standards and (2) existing FAA radar equipment at the Airport.

**Weather data provided by the National Oceanic and Atmospheric Administration.



LEGEND

- Parallel runway
- Runway threshold in 1987 Master Plan location
- Runway threshold for Optional Shift location
- Existing Airport boundary
- Tunnel



Exhibit S-2
PARALLEL RUNWAY ALTERNATIVES
 Master Plan Update
 Tucson International Airport
 November 1996



LEIGH FISHER ASSOCIATES

changed significantly from that in the 1987 Master Plan. However, the phasing plan for moving toward that ultimate airfield could be dependent on how land uses develop on the Airport in addition to the considerations described above.

Each planning concept included all land uses, in addition to the airfield, that would occupy the largest land areas at the Airport. Other Airport land uses are also included in the recommended plan, but were not considered critical for comparing the concept components. The critical land uses identified in the planning concepts include:

- ***Airfield:*** Runways, taxiways, runway protection zones, building restriction lines, and airfield approach zones.
- ***Passenger terminal complex:*** Passenger terminal building, aircraft parking apron, automobile parking (public, rental, employee), terminal roadways, and associated uses.
- ***General/corporate aviation:*** Fixed base operator facilities and other activities that involve the sale of general aviation products and services to the public and facilities for basing and servicing private aircraft maintained by individuals or organizations. Facilities include terminal areas where passengers on visiting business and corporate aircraft can access ground transportation, rental cars, and U.S. Customs and other inspection services.
- ***Terminal support:*** Facilities that provide a wide range of support services for the Airport terminal, such as long-term parking, Airport administration, concessions services, the FAA, and other federal services such as U.S. Customs and the National Weather Service.
- ***Airline support/belly cargo/maintenance:*** Facilities that provide services to the airlines, such as inflight catering, fuel farms, belly cargo, and maintenance. Belly cargo includes U.S. mail, parcels from freight forwarders, and express or other cargo parcels brought to the Airport by individuals or businesses to be carried on passenger rather than all-cargo aircraft.
- ***Air cargo:*** Facilities related to enplaned and deplaned cargo shipped on all-cargo aircraft. This includes the overnight parcel air service providers (e.g., FedEx, Airborne Express), as well as other bulk cargo carriers (e.g., Emery Worldwide, Evergreen International).
- ***Industrial/cargo:*** Aviation- and nonaviation-related commercial and industrial uses that may include offices, warehouses, and manufacturing plants. These facilities would have potential access to the airfield, rail lines, and highways and would be intended to accommodate multimodal transportation needs and potential trade between the United States and Mexico.

Five preliminary land use and illustrative development concepts were prepared and discussed with Tucson Airport Authority staff. At the conclusion of that discussion, three concepts that included certain unique elements from each of the five preliminary versions were developed for further consideration. The concepts *did not* represent individual alternative land use plans for the Airport. The illustrative drawings were intended to depict how various elements *could* be developed and were not used to directly compare overall concepts nor the actual design or configuration of structures and areas.

It was anticipated that the recommended land use plan would include elements from one or more of the concepts illustrated to reflect input from the Long-Range Planning Council and the Technical Advisory Committee and technical comparisons.

Certain elements are consistent in all three concepts:

- The ultimate airfield includes three parallel air carrier runways and the existing crosswind runway to illustrate the relationships between alternative land uses and the airfield. The locations of the future runways are as shown on the current Airport Layout Plan. A fourth parallel general aviation runway is depicted on Concept B, consistent with the 1987 Master Plan.
- The area southwest of the main parallel runways includes the existing Learjet facility, along with a combined industrial/cargo use. The Learjet facility is considered to be general/corporate aviation and is in an area that is under a long-term lease. The industrial/cargo area is located to facilitate access to existing rail and highway facilities.
- Primary access to the passenger terminal complex would continue to be via South Tucson Boulevard, although internal circulation may vary.
- The international facilities are assumed to be included in the passenger terminal complex in the long term.

The following Exhibits S-3, S-4, and S-5 depict each of the three overall concepts.

PLANNING GUIDELINES AND COMPARISONS OF LAND USE CONCEPTS AND RUNWAY ALTERNATIVES

Planning guidelines for the Master Plan Update were established as an early task in the project. Each of the three land use and illustrative development concepts includes the components required to meet these planning guidelines, although some of the guidelines are met in different ways among the concepts.

The merits of the land use concepts and the parallel runway alternatives were compared for the Master Plan Update. The comparative criteria were based on the planning guidelines. Tables S-4 and S-5 present comparisons of the land use

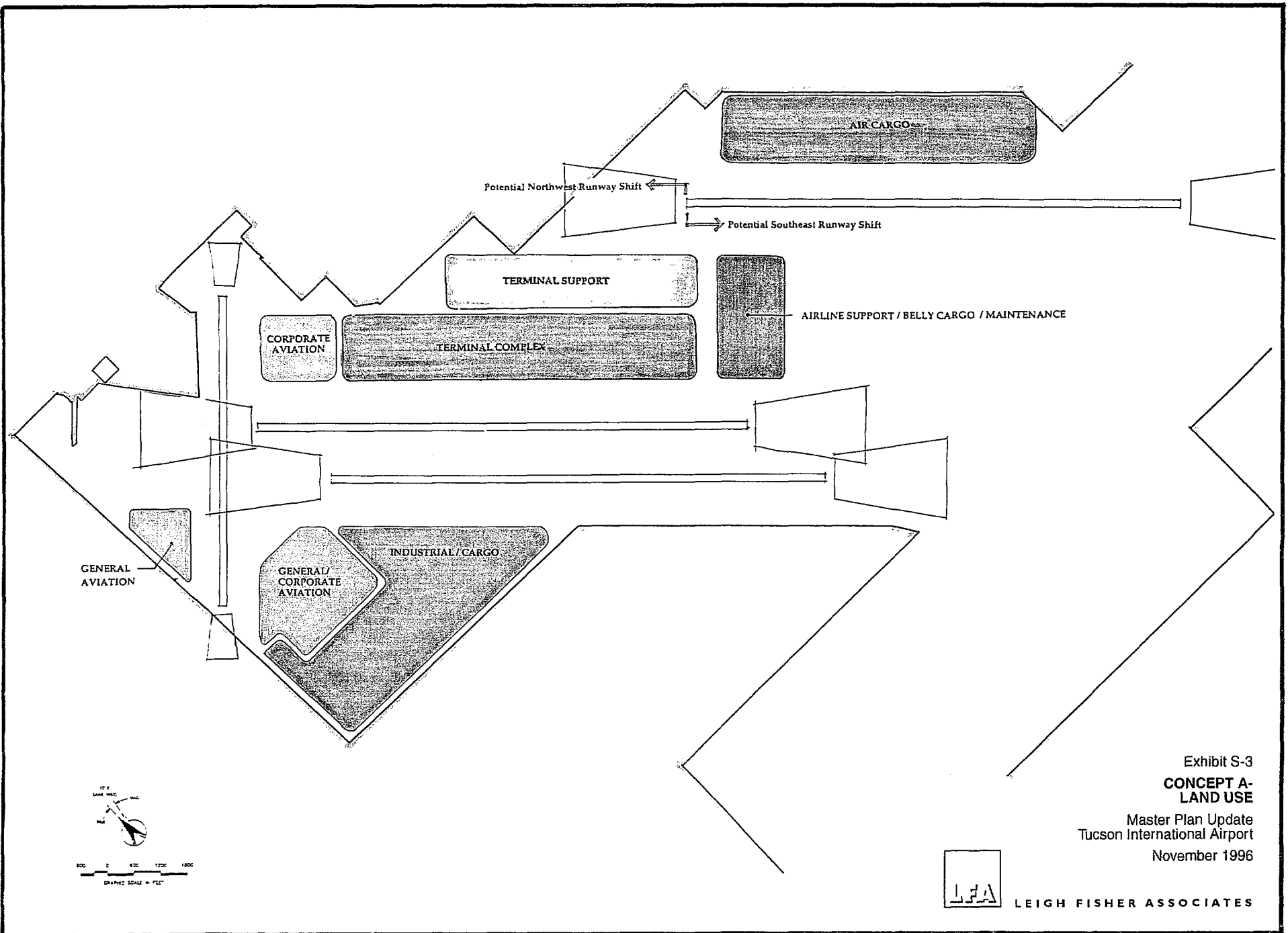


Exhibit S-3
**CONCEPT A-
LAND USE**

Master Plan Update
Tucson International Airport
November 1996



LEIGH FISHER ASSOCIATES

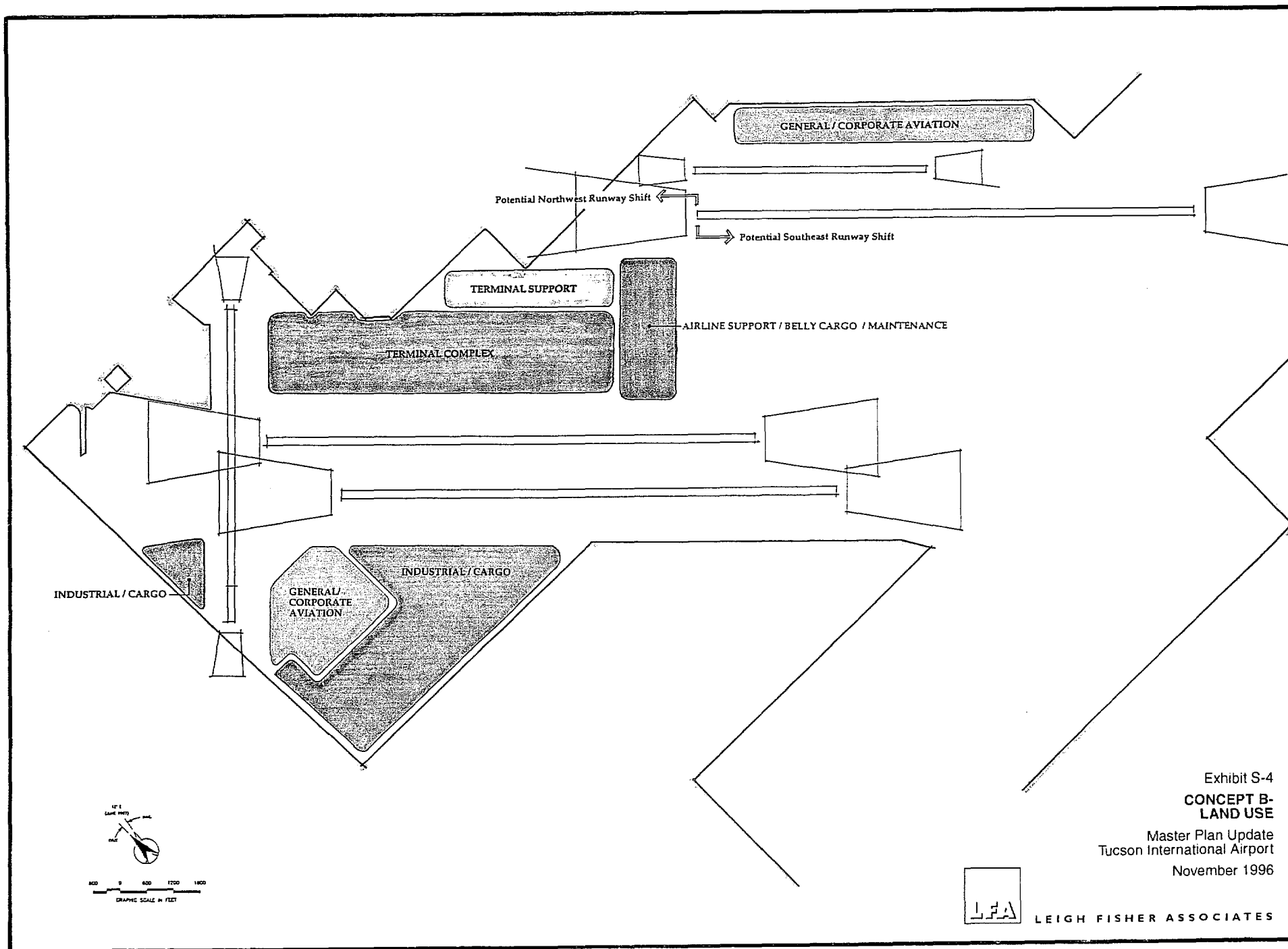


Exhibit S-4
**CONCEPT B-
LAND USE**

Master Plan Update
Tucson International Airport
November 1996



LEIGH FISHER ASSOCIATES

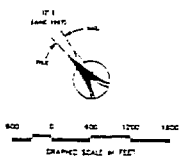
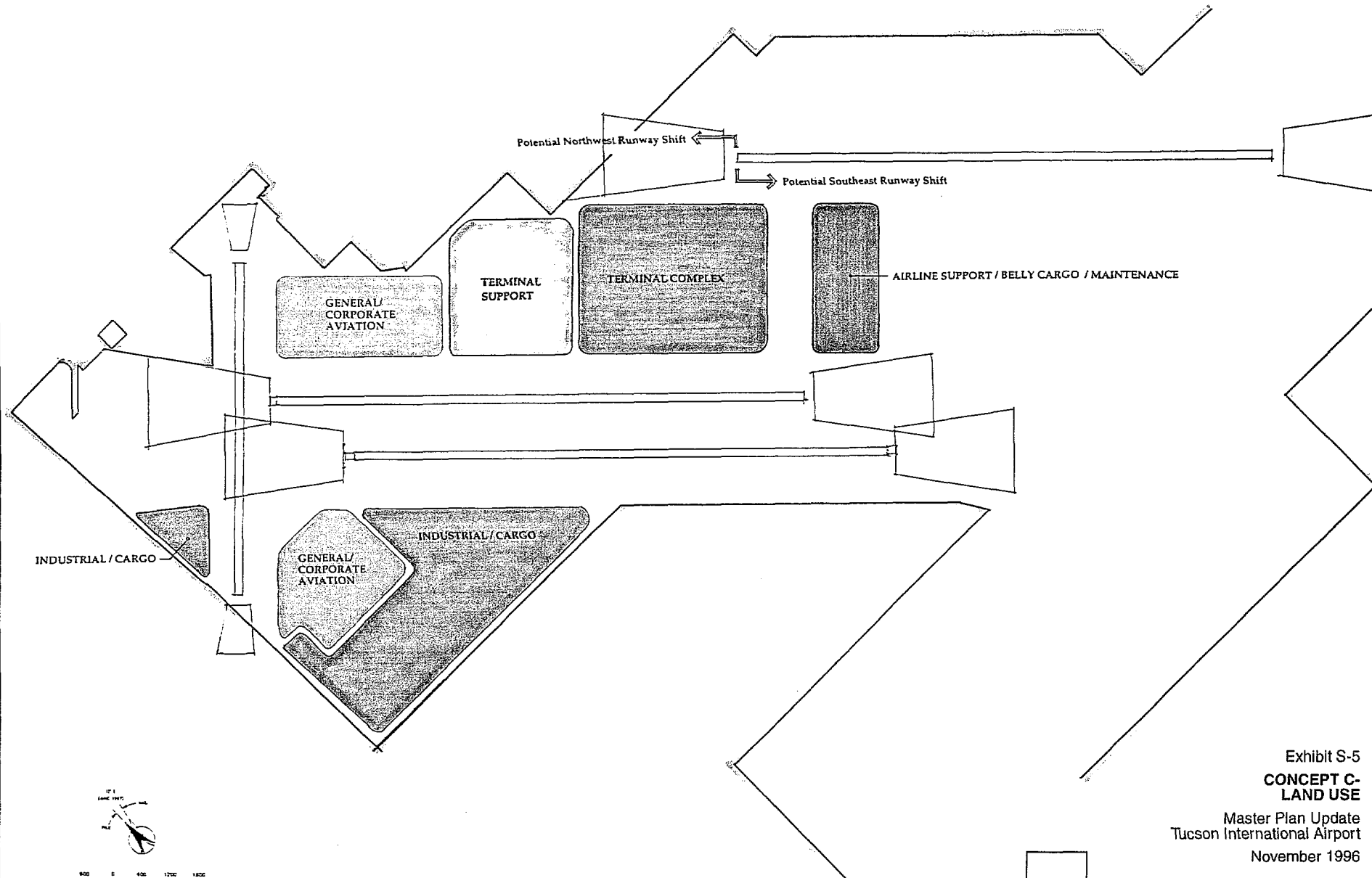


Exhibit S-5
**CONCEPT C-
 LAND USE**
 Master Plan Update
 Tucson International Airport
 November 1996

Table S-4
COMPARISON OF LONG-RANGE LAND USE CONCEPT ALTERNATIVES
Tucson International Airport

| Criterion | Concept A | Concept B | Concept C |
|---|--|--|--|
| Ability to accommodate future demand for aircraft, passengers, and vehicles | <ul style="list-style-type: none"> Meets criterion | <ul style="list-style-type: none"> Meets criterion | <ul style="list-style-type: none"> Meets criterion |
| Project costs (terminal concepts) | <ul style="list-style-type: none"> \$125 million | <ul style="list-style-type: none"> \$125 million | <ul style="list-style-type: none"> \$170 million |
| Environmental effects | <ul style="list-style-type: none"> Potential environmental remediation in area near existing AANG test pad Eventual effects on drainage channel southeast of existing cargo area Terminal and parking expansion could require air quality conformity determination | <ul style="list-style-type: none"> Potential environmental remediation in area near existing AANG test pad Eventual effects on drainage channel southeast of existing cargo area Terminal and parking expansion could require air quality conformity determination | <ul style="list-style-type: none"> Potential environmental remediation in area near existing AANG test pad Effects on drainage channel southeast of existing cargo area from terminal construction Construction of new terminal could require detailed air quality review and conformity determination. |
| Ability to meet long-range goals | <ul style="list-style-type: none"> Meets criterion | <ul style="list-style-type: none"> Meets criterion | <ul style="list-style-type: none"> Meets criterion |
| Phasing considerations | <ul style="list-style-type: none"> Allows incremental terminal expansion Cargo facilities would need to be relocated for ultimate terminal expansion—not likely within planning period Temporary changes to ground access and parking may be necessary during construction of new terminal Requires eventual reconstruction of existing terminal building | <ul style="list-style-type: none"> Allows incremental terminal expansion Ground access and parking effects likely during construction of new terminal Requires eventual reconstruction of existing terminal building | <ul style="list-style-type: none"> Construction of new terminal would begin when existing terminal and concourses reach capacity Operations at existing terminal would be largely unaffected during new construction Corporate/general aviation could expand after demolition of existing terminal building New air cargo facility development could be preserved |
| Other considerations | <ul style="list-style-type: none"> Ultimate passenger terminal development would require eventual relocation of air cargo facilities. Maintains general aviation near Runway 3-21—short taxi distance for crosswind runway use Cargo development to the southeast in area previously reserved for general aviation would be associated with far parallel runway construction General aviation runway to the southeast shown on existing master plan not needed | <ul style="list-style-type: none"> Ultimate passenger terminal moved toward constrained area northwest of existing facility and requires relocation of general aviation facilities General aviation moved away from Runway 3-21—long taxiing distance for crosswind runway use | <ul style="list-style-type: none"> Allows eventual expansion of corporate/general aviation in its present, constrained location northwest of the existing terminal Could alleviate taxiing problems near the intersection of Runways 11L-29R and 3-21 Centralizes terminal area to the far parallel runway configuration General aviation runway to the southeast shown on existing master plan not needed |

Note: Project costs are order-of-magnitude for terminal facilities to accommodate traffic through PAL 4 (see Table S-3) and are to be used for comparison purposes only.

Source: Leigh Fisher Associates, August 1996.

Table S-5
COMPARISON OF PARALLEL RUNWAY DEVELOPMENT ALTERNATIVES
Tucson International Airport

| Criterion | Close parallel runway | Far parallel runway |
|---|---|---|
| Ability to accommodate future demand for aircraft, passengers, and vehicles | <ul style="list-style-type: none"> Meets criterion | <ul style="list-style-type: none"> Meets criterion |
| Project costs | <ul style="list-style-type: none"> \$38.0 million (includes associated taxiway improvements and land acquisition, relocation of Hughes Missile Systems facilities not included—see Table 5-1) | <ul style="list-style-type: none"> \$68.0 million to \$70.3 million—air carrier runway in location shown on existing master plan (includes new taxiway access and land acquisition) \$68.6 million to \$70.0 million additional if the runway is shifted 2,300 feet to the northwest \$3.7 million additional for parallel general aviation runway (Concept B only) |
| Environmental effects | <ul style="list-style-type: none"> No significant increases in noise levels anticipated over noise-sensitive land uses Relocation of Hughes facilities and associated environmental cleanup required No significant environmental effects identified with respect to the runway in the environmental assessment for land acquisition—an environmental assessment (and possibly an environmental impact statement) specifically addressing runway development would be required | <ul style="list-style-type: none"> Original location of runway established to prevent significant increases in noise over noise-sensitive land uses; shift to northwest would be toward primarily compatible development; some hotels and businesses could be exposed to significant aircraft noise Shift to northwest would require relocation of Los Reales Road and associated environmental effects Potential air quality concerns associated with longer taxiing distance with Terminal Concepts A and B Runway is in the 100-year floodplain associated with Airport Wash A full environmental assessment (and possibly an environmental impact statement) would be required |
| Ability to meet long-range goals | <ul style="list-style-type: none"> Meets criterion | <ul style="list-style-type: none"> Meets criterion |
| Phasing considerations | <ul style="list-style-type: none"> Requires intermittent closure of temporary Runway 11R-29L during part if not all of runway construction period Requires acquisition of land and relocation of Hughes facilities Portions of the west ramp would need to be cleared prior to runway opening | <ul style="list-style-type: none"> Requires realignment of and/or construction of a tunnel for Alvernon Way May require relocation or closure of Swan Road Requires relocation of power lines along Swan Road Land acquisition required prior to runway construction |
| Other considerations | <ul style="list-style-type: none"> Shorter overall average taxiing time for passenger aircraft than for far parallel runway with Terminal Concepts A and B Taxiing time nearly equal for two runway concepts with Terminal Concept C | <ul style="list-style-type: none"> Parallel runway separation would allow independent (simultaneous) landings in instrument weather conditions, which occur less than 1% of the year Longer average taxiing time than for close parallel runway for Terminal Concepts A and B (difference as much as 1.5 minutes per operation) Taxiing time nearly equal for two runway concepts with Terminal Concept C |

Note: Project costs are order-of-magnitude and are to be used for comparison purposes only.

Source: Leigh Fisher Associates, August 1996.

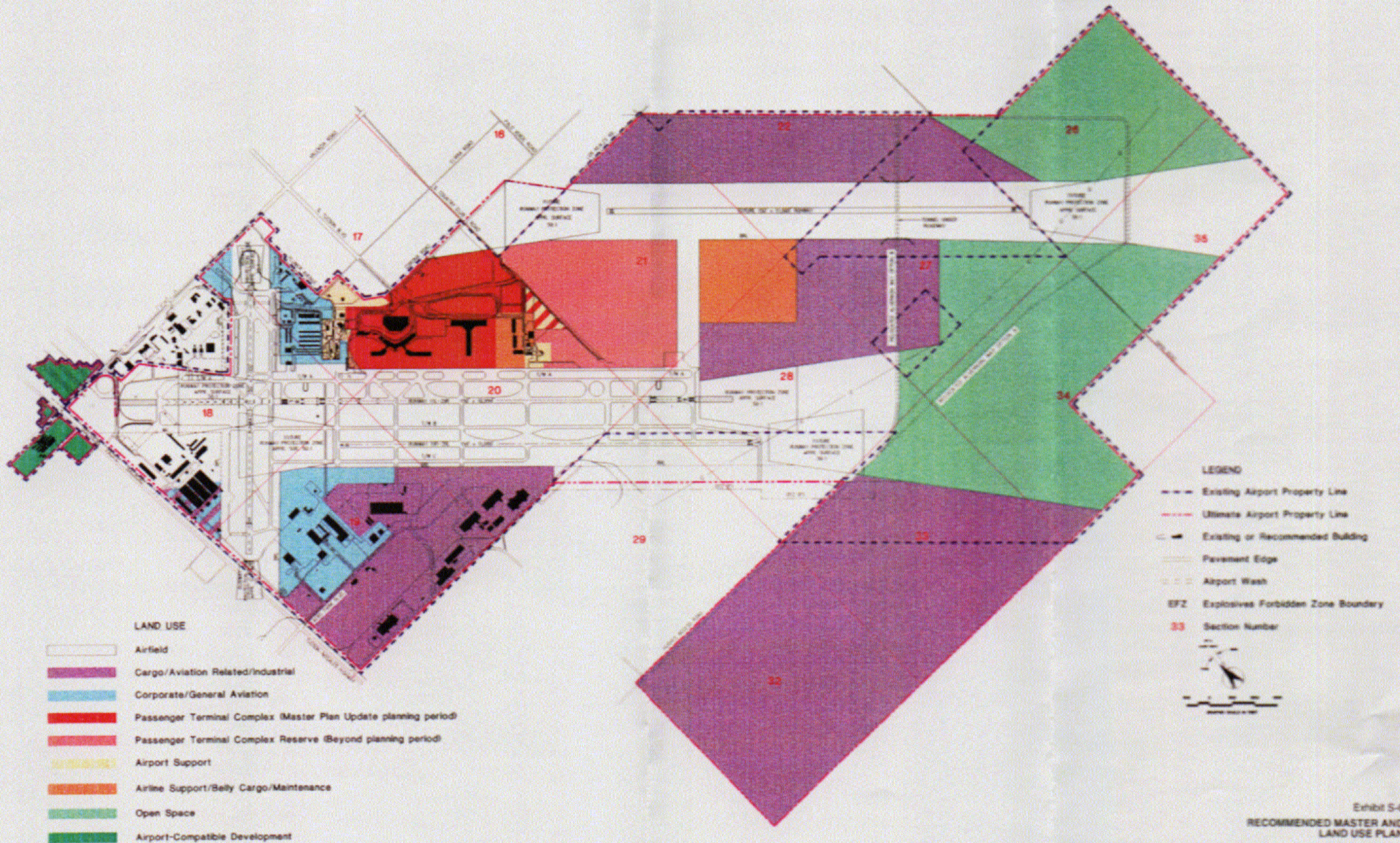
concepts and the parallel runway development alternatives, respectively, that were used to establish the recommended Master and Land Use Plan for Tucson International Airport.

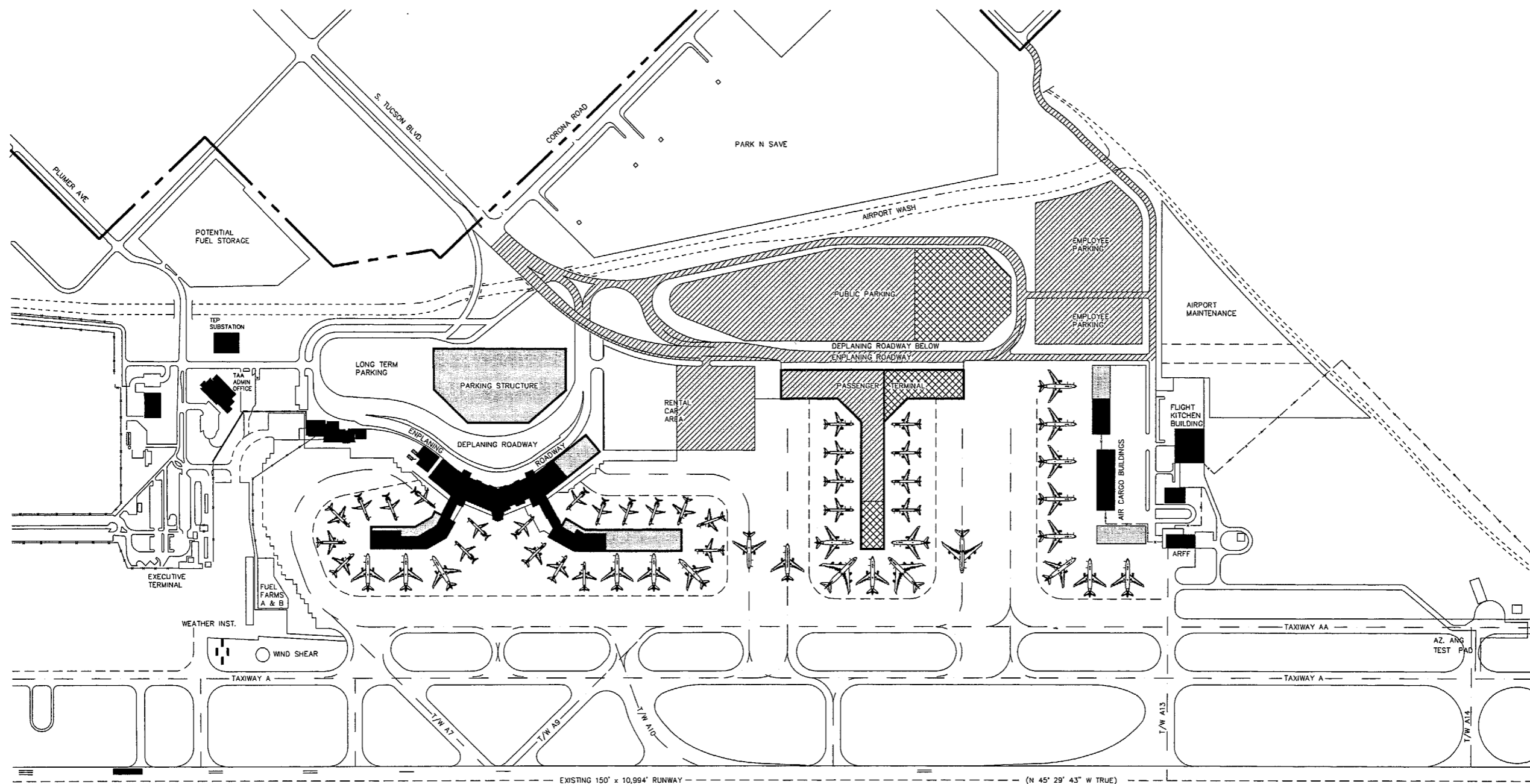
MASTER PLAN UPDATE RECOMMENDATIONS

The recommended Master Plan Update and Terminal Area Plan are depicted on Exhibits S-6 and S-7, and a summary of the projects to be included is provided in Table S-6.

The following are the major recommendations in the Master Plan Update:

- Construction of new parallel air carrier Runway 11R-29L southwest of Runway 11L-29R and reconversion of existing temporary Runway 11R-29L to its former taxiway status.
- Reservation of a site for a third parallel runway southeast of the existing runways, when needed beyond the planning period for the Master Plan Update.
- Construction of various taxiways, including exit taxiways, to serve air carrier and general aviation aircraft.
- Expansion of the existing terminal and concourses initially and then construction of an additional terminal and concourse to the southeast.
- Incorporation of international facilities for air carrier passengers when the existing concourses are expanded.
- Reservation of land southeast of the existing terminal complex for long-range terminal development.
- Development of corporate and general aviation basing activities in the four areas depicted in Exhibit S-6.
- Retention of the existing air cargo area.
- Development of air cargo, other aviation-related, and industrial areas, as depicted in Exhibit S-6.
- No development of designated open space areas, except for compatible recreational facilities.
- Acquisition of some 3,000 acres for Airport development and land use compatibility purposes.





LEGEND:

- Existing
- PAL 1 to PAL 2 Passenger Terminal and Associated Improvements
- PAL 2 to PAL 3 Passenger Terminal and Associated Improvements
- PAL 3 to PAL 4 Passenger Terminal and Associated Improvements

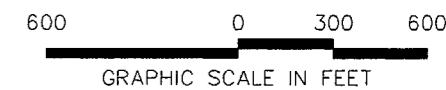
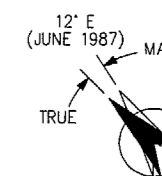


Exhibit S-7
TERMINAL AREA PLAN
Master Plan Update
Tucson International Airport
November 1996

Table S-6
IMPLEMENTATION PHASING PLAN
Tucson International Airport

| Project description | Approximate project cost |
|--|-----------------------------|
| PAL 1 | |
| Land acquisition | |
| Acquire approximately 200 acres of land occupied by Hughes Missile Systems to accommodate the construction of Runway 11R-29L | \$ 2,400,000 |
| Acquire approximately 960 acres of land owned by the State of Arizona to accommodate the relocation of Hughes Missile Systems facilities | 6,150,000 |
| Acquire approximately 1,440 additional acres of land to achieve land use compatibility with aircraft noise exposure | 3,550,000 |
| Airfield | |
| Construct new exit from Runway 11L-29R to Taxiway A, 2,000 feet from the Runway 11 arrival threshold | 83,000 |
| Construct new exit from Runway 3-21 to Taxiway D, 2,200 feet from the Runway 3 arrival threshold | 79,000 |
| Passenger terminal | |
| Install visual paging/monitoring system in the Main Passenger Terminal Building | 300,000 |
| Expand and remodel baggage claim area in the Main Passenger Terminal Building | 10,000,000 |
| Install shade canopies in the taxi parking area | 388,000 |
| Roadways and parking | |
| Construct 24-foot-wide roadway from terminal employee parking lot to the new air freight terminal | 340,000 |
| Support buildings | |
| Relocate the maintenance facility southeast of the passenger terminal complex near the aircraft rescue and fire fighting facility | 2,000,000 |
| Environmental | |
| Construct stormwater drainage facility structural improvements | 2,000,000 |
| PAL 1 to PAL 2 | |
| Land acquisition | |
| Acquire approximately 410 acres of land to accommodate future far parallel runway | 3,355,000 |
| Planning | |
| Prepare an environmental assessment to determine the effects of constructing and operating recommended close parallel Runway 11R-29L | 200,000 |
| Airfield | |
| Demolish structures in the west ramp area to accommodate the extended runway protection zone of recommended close parallel Runway 11R-29L; restore area to cleared state | 3,000,000 |

Table S-6 (page 2 of 2)
IMPLEMENTATION PHASING PLAN
 Tucson International Airport

| Project description | Approximate project cost |
|--|--------------------------|
| PAL 1 to PAL 2 (continued) | |
| Passenger terminal | |
| Extend and widen the east and west concourses to provide additional gates, construct Federal Inspection Services facilities in the lower level of the east concourse, expand the main terminal area for additional baggage claim | 14,300,000 |
| Construct aircraft parking apron for expanded east concourse | 1,800,000 |
| Construct aircraft fuel distribution system and hydrants for expanded concourses | 625,000 |
| Roadways and parking | |
| Construct parking garage for existing passenger terminal | 10,500,000 |
| PAL 2 to PAL 3 | |
| Land acquisition | |
| Relocate Hughes Missile Systems facilities to accommodate planned close parallel Runway 11R-29L | -- (a) |
| Airfield | |
| Construct new Runway 11R-29L and redesignate existing Runway 11R-29L as a taxiway (includes high-speed taxiway exits and environmental mitigation) | 26,116,000 |
| Relocate Taxiway C to provide centerline-to-centerline spacing from new Runway 11R-29L of 450 feet | 5,760,000 |
| Passenger terminal | |
| Construct the first phase of a new passenger terminal building southeast of the existing terminal building | 46,000,000 |
| Roadways and parking | |
| Construct roadway access loop and parking to serve new terminal building | 6,700,000 |
| PAL 3 to PAL 4 | |
| Passenger terminal | |
| Construct second phase of the new passenger terminal building | 28,000,000 |

(a) The estimated cost for relocating the Hughes Missile Systems facilities is about \$25.0 million.
 The total amount that will be paid by the Tucson Airport Authority is not known at this time.

Sources: Tucson Airport Authority and Urban Engineering, Inc.

FINANCIAL PLAN

A preliminary financial plan for the development program recommended in the Master Plan Update is provided in this section, along with other key projects in the Authority's Capital Improvement Program (CIP) for the Airport.

Because of the uncertainties involved in projecting financial data, the financial analysis covers only the major capital improvements expected to be required in the first 7 years (through 2003), which corresponds with PAL 2 under the baseline forecasts. It was assumed in the analysis that (1) future traffic levels will be achieved in accordance with the baseline forecasts, (2) the Authority will receive future Airport Improvement Program (AIP) grants-in-aid and State of Arizona grants-in-aid in support of certain eligible projects, and (3) the Authority will impose a passenger facility charge (PFC) in the amount of \$3 per eligible enplaned passenger. If the assumed traffic levels are not achieved or the assumed funds are not available, certain projects would be deferred. In summary, the preliminary financial plan overview is as follows:

- Incorporates projects in:
 - Implementation Phasing Plan in the Master Plan Update
 - Capital Improvement Program (CIP) for Tucson International Airport
- Focuses on improvements through 2003 (Planning Activity Level 2 under "baseline" traffic forecasts)
- Total estimated project costs over 7 years: \$89 million
- Projected funding sources:
 - FAA Airport Improvement Program (AIP) grants-in-aid
 - State of Arizona grants-in-aid
 - Passenger facility charge (\$3 per passenger beginning in 1998)
 - Future Airport revenue bonds
- Airline rentals and fees and associated costs for enplaned passenger required to support Airport revenue bonds are projected to be in "reasonable" range
- Implementation of financial plan is feasible subject to majority-in-interest airline concurrence
- Financial plan is preliminary and is not intended to be used to support the sale of bonds or to obtain other forms of financing; more detailed studies are appropriate when projects are designed and financing is pursued

The Authority owns and operates Ryan Airfield, a general aviation reliever airport to Tucson International Airport. These two airports (and any other airport that might be constructed or acquired by the Authority in the future) constitute the Airport System operated by the Authority. No improvements at Ryan Airfield are included in the financial analysis.

The financial projections were prepared on the basis of available information and various assumptions. It is believed that such information and assumptions provide a reasonable basis for the projections to the level of detail appropriate for an airport master plan. However, some of the assumptions used to develop the projections will not be realized and unanticipated events and circumstances may occur. Therefore, the actual results will vary from those projected, and such variations could be material.

Capital Improvement Program

Table S-7 documents the capital improvements planned through 2003 and associated cost estimates by year. The amount of funding available from each of these sources will depend on future levels of aviation activity at the Airport.

Preliminary Financial Plan

Table S-8 presents the preliminary financial plan, showing proposed sources and uses of funds. Consistent with past Authority practice, it is assumed that project costs that cannot be funded with other sources (such as federal and State grants-in-aid, PFC revenues, and other Authority funds) will be financed with the proceeds of additional bonds. It is assumed that two series of bonds will be issued: \$28.8 million in 1998 for PAL 1 projects and \$6.9 million in 2001 for PAL 2* projects.

Under the Use Agreements, the debt service requirements of such bonds (plus coverage at 25%) would be included in the annual calculation of airline landing fees, provided that majority-in-interest airline approval is obtained.

Required Airline Revenue

Table S-9 presents the calculation of the airline revenue requirement (to be paid as airline landing fees) for each year through FY 2004. Also shown is the total of all airline payments (space rentals, landing fees, and other charges) expressed per enplaned passenger.

*Timing for PAL 1 and PAL 2 projects is according to the baseline forecasts.

Table S-7

CAPITAL IMPROVEMENT PROGRAM
Tucson Airport Authority
For Fiscal Years Ending September 30

| Project Description | Project number | Estimated Project costs (1996 dollars) | Planning activity level | Project costs (escalated dollars) (a) | | | | | | | Total project costs (escalated dollars) | Grants-in-aid | | Net project costs to be paid from Authority funds |
|---|----------------|--|-------------------------|---------------------------------------|--------------|-------------|-------------|-------------|-------------|-------------|---|---------------|-------------|---|
| | | | | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | | Federal | State | |
| PLANNING PROJECTS | | | | | | | | | | | | | | |
| Land acquisition - expansion | PD88-002B | \$8,550,000 | 1,2 | -- | \$2,138,000 | \$2,138,000 | \$2,138,000 | \$2,138,000 | -- | -- | \$8,552,000 | \$3,909,000 | \$3,348,000 | \$1,295,000 |
| Land acquisition - expansion | PD88-002B | 3,355,000 | 2 | -- | -- | -- | -- | 1,678,000 | 1,678,000 | -- | 3,356,000 | 1,534,000 | 1,314,000 | 508,000 |
| Land acquisition - noise | PD88-002C | 3,550,000 | 1,2 | -- | 710,000 | 710,000 | 710,000 | 710,000 | 710,000 | -- | 3,550,000 | 1,623,000 | 1,390,000 | 537,000 |
| Sound insulation program | PD91-085 | 10,500,000 | 1,2 (b) | -- | 1,000,000 | 1,500,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 10,500,000 | 9,555,000 | 160,000 | 785,000 |
| Mobile home acquisition | PD91-086 | 1,376,000 | 2 (b) | -- | -- | -- | -- | 532,000 | 548,000 | 564,000 | 1,644,000 | -- | -- | 1,644,000 |
| Environmental assessment - Runway 11R-29L | PD92-127 | 200,000 | 1 | -- | -- | -- | -- | 232,000 | -- | -- | 232,000 | -- | -- | 232,000 |
| | | \$27,531,000 | | -- | \$3,848,000 | \$4,348,000 | \$4,848,000 | \$7,290,000 | \$4,936,000 | \$2,564,000 | \$27,834,000 | \$16,621,000 | \$6,212,000 | \$5,001,000 |
| BUILDINGS | | | | | | | | | | | | | | |
| Expansion of main terminal and international facilities | PD89-001 | \$14,300,000 | 2 | -- | -- | -- | -- | \$8,289,000 | \$8,537,000 | -- | \$16,826,000 | -- | -- | \$16,826,000 |
| Emergency generator | PD92-128 | 63,000 | 1 (b) | -- | -- | 69,000 | -- | -- | -- | -- | 69,000 | -- | -- | 69,000 |
| Executive work stations | PD93-165 | 32,000 | 1 (b) | -- | 34,000 | -- | -- | -- | -- | -- | 34,000 | -- | -- | 34,000 |
| Expand/remodel baggage claim area | PD96-227 | 10,000,000 | 1 | -- | 10,609,000 | -- | -- | -- | -- | -- | 10,609,000 | -- | -- | 10,609,000 |
| Canopies at taxi parking | PD97-283 | 388,000 | 1 | -- | 412,000 | -- | -- | -- | -- | -- | 412,000 | -- | -- | 412,000 |
| Visual monitor/paging system | PD96-226 | 300,000 | 1 | -- | -- | 328,000 | -- | -- | -- | -- | 328,000 | -- | -- | 328,000 |
| | | \$25,083,000 | | -- | \$11,055,000 | \$397,000 | -- | \$8,289,000 | \$8,537,000 | -- | \$28,278,000 | -- | -- | \$28,278,000 |
| PARKING STRUCTURE | | | | | | | | | | | | | | |
| Parking garage | PD88-003 | \$10,500,000 | 2 | -- | -- | \$5,737,000 | \$5,909,000 | -- | -- | -- | \$11,646,000 | -- | -- | \$11,646,000 |
| CCTV and alarm | PD88-028 | 105,000 | 1 (b) | -- | -- | -- | \$118,000 | -- | -- | -- | 118,000 | -- | -- | 118,000 |
| Terminal parking admin building | PD96-220 | 150,000 | 1 (b) | -- | -- | -- | 169,000 | -- | -- | -- | 169,000 | -- | -- | 169,000 |
| | | \$10,755,000 | | -- | -- | \$5,737,000 | \$6,196,000 | -- | -- | -- | \$11,933,000 | -- | -- | \$11,933,000 |
| EXECUTIVE TERMINAL | | | | | | | | | | | | | | |
| Executive terminal elevator | PD88-018 | \$118,000 | 2 (b) | -- | -- | -- | \$133,000 | -- | -- | -- | \$133,000 | -- | -- | \$133,000 |
| New pilot lounge | PD91-091 | 61,000 | 2 (b) | -- | -- | -- | 69,000 | -- | -- | -- | 69,000 | -- | -- | 69,000 |
| Observation deck | PD92-130 | 99,000 | 1,2 (b) | -- | -- | 108,000 | -- | -- | -- | -- | 108,000 | -- | -- | 108,000 |
| | | \$278,000 | | -- | -- | \$108,000 | \$202,000 | -- | -- | -- | \$310,000 | -- | -- | \$310,000 |
| INDUSTRIAL - HANGARS - CARGO | | | | | | | | | | | | | | |
| Demolition - restoration of west ramp area (c) | PD94-171 | \$3,000,000 | 2 | -- | -- | -- | -- | -- | -- | \$3,690,000 | 3,690,000 | -- | -- | \$3,690,000 |
| Demolition of Mobat Building | PD97-282 | 162,000 | 1 (b) | -- | -- | 177,000 | -- | -- | -- | -- | 177,000 | -- | -- | 177,000 |
| | | \$3,162,000 | | -- | -- | \$177,000 | -- | -- | -- | \$3,690,000 | \$3,867,000 | -- | -- | \$3,867,000 |
| SUPPORT BUILDINGS | | | | | | | | | | | | | | |
| Shade structure | PD90-066 | \$35,000 | 1 (b) | -- | \$37,000 | -- | -- | -- | -- | -- | \$37,000 | -- | -- | \$37,000 |
| Building maintenance warehouse | PD93-163 | 143,000 | 1 (b) | -- | 152,000 | -- | -- | -- | -- | -- | 152,000 | -- | -- | 152,000 |
| Fuel truck covered parking | PD96-216 | 185,000 | 1 (b) | -- | -- | -- | 208,000 | -- | -- | -- | 208,000 | -- | -- | 208,000 |
| Expand existing warehouse | PD96-217 | 264,000 | 1 (b) | -- | 280,000 | -- | -- | -- | -- | -- | 280,000 | -- | -- | 280,000 |
| Relocate maintenance facility | PD97-281 | 2,000,000 | 1 | -- | -- | 2,185,000 | -- | -- | -- | -- | 2,185,000 | -- | -- | 2,185,000 |
| | | \$2,627,000 | | -- | \$469,000 | \$2,185,000 | \$208,000 | -- | -- | -- | \$2,862,000 | -- | -- | \$2,862,000 |

Table S-7 (page 2 of 2)
CAPITAL IMPROVEMENT PROGRAM
Tucson Airport Authority
For Fiscal Years Ending September 30

| Project Description | Project number | Estimated Project costs (1996 dollars) | Planning activity level | Project costs (escalated dollars) (a) | | | | | | Total project costs (escalated dollars) | Grants-in-aid | | Net project costs to be paid from Authority funds |
|--|----------------|--|-------------------------|---------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---|---------------------|---------------------|---|
| | | | | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | | 2003 | Federal | |
| RUNWAYS - TAXIWAYS - APRONS | | | | | | | | | | | | | |
| Expand terminal apron | PD89-035 | \$1,800,000 | 2 | -- | -- | \$983,000 | \$1,013,000 | -- | -- | -- | \$1,996,000 | -- | \$1,996,000 |
| Overlay Taxiway D | PD90-064 | 1,787,000 | 1 (b) | 1,841,000 | -- | -- | -- | -- | -- | -- | 1,841,000 | 842,000 | 278,000 |
| Light removal and relocation - G.A. tiedown | PD92-135 | 204,000 | 1 (b) | -- | 216,000 | -- | -- | -- | -- | -- | 216,000 | -- | 216,000 |
| G.A. apron reconstruction | PD92-148 | 9,000 | 1 (b) | -- | -- | 10,000 | -- | -- | -- | -- | 10,000 | -- | 10,000 |
| Overlay Runway 11R-29L | PD93-169 | 2,413,000 | 1 (b) | -- | -- | -- | 2,716,000 | -- | -- | -- | 2,716,000 | -- | 2,716,000 |
| Taxiway - Customs clearance area | PD95-196 | 85,000 | 1,2 (b) | -- | -- | 93,000 | -- | -- | -- | -- | 93,000 | -- | 93,000 |
| Taxiway exit from Runway 11L | | 83,000 | 1 | -- | 88,000 | -- | -- | -- | -- | -- | 88,000 | -- | 88,000 |
| Taxiway exit from Runway 3 | | 79,000 | 1 | -- | 84,000 | -- | -- | -- | -- | -- | 84,000 | -- | 84,000 |
| | | \$6,460,000 | | \$1,841,000 | \$388,000 | \$1,086,000 | \$3,729,000 | -- | -- | -- | \$7,044,000 | \$842,000 | \$5,481,000 |
| UTILITIES - FUELING SYSTEMS | | | | | | | | | | | | | |
| Aircraft fuel distribution and hydrants | PD89-037 | \$625,000 | 2 | -- | -- | \$341,000 | \$352,000 | -- | -- | -- | \$693,000 | -- | \$693,000 |
| Hydrant feederline to air freight apron | PD90-058 | 1,236,000 | 2 (b) | -- | -- | -- | -- | 716,000 | 738,000 | -- | 1,454,000 | -- | 1,454,000 |
| Main terminal generators | PD92-136 | 93,000 | 1 (b) | 96,000 | -- | -- | -- | -- | -- | -- | 96,000 | -- | 96,000 |
| Firehouse generator | PD92-139 | 36,000 | 1 (b) | -- | 38,000 | -- | -- | -- | -- | -- | 38,000 | -- | 38,000 |
| Fuel farm A/B improvements | PD94-176 | 258,000 | 1 (b) | -- | 274,000 | -- | -- | -- | -- | -- | 274,000 | -- | 274,000 |
| Fuel farm C improvements | PD94-177 | 39,000 | 1 (b) | -- | 41,000 | -- | -- | -- | -- | -- | 41,000 | -- | 41,000 |
| Fuel farm D - construct roadway | PD94-178 | 22,000 | 2 (b) | -- | -- | -- | 25,000 | -- | -- | -- | 25,000 | -- | 25,000 |
| Automotive fuel facility - tank farm D | PD95-198 | 86,000 | 2 (b) | -- | -- | -- | 97,000 | -- | -- | -- | 97,000 | -- | 97,000 |
| Tank farm A/B dual electrical feeder | PD95-199 | 53,000 | 1 (b) | -- | 56,000 | -- | -- | -- | -- | -- | 56,000 | -- | 56,000 |
| Upgrade tank farm A/B | PD97-264 | 104,000 | 1 (b) | 107,000 | -- | -- | -- | -- | -- | -- | 107,000 | -- | 107,000 |
| Upgrade vehicle fueling facility | PD97-265 | 87,000 | 1 (b) | 90,000 | -- | -- | -- | -- | -- | -- | 90,000 | -- | 90,000 |
| | | \$2,639,000 | | \$293,000 | \$409,000 | \$341,000 | \$474,000 | \$716,000 | \$738,000 | -- | \$2,971,000 | -- | \$2,971,000 |
| PARKING - ROADWAYS | | | | | | | | | | | | | |
| Commercial roadway observation equipment | PD92-142 | \$25,000 | 1,2 (b) | -- | -- | \$27,000 | -- | -- | -- | -- | \$27,000 | -- | \$27,000 |
| Airport drive | PD94-180 | 340,000 | 1 | -- | 361,000 | -- | -- | -- | -- | -- | 361,000 | -- | 361,000 |
| Lighting for east Park -N- Save overflow lot | PD96-218A | 30,000 | 1 (b) | -- | 32,000 | -- | -- | -- | -- | -- | 32,000 | -- | 32,000 |
| Development of west Park -N- Save overflow lot | PD96-218B | 130,000 | 1 (b) | -- | 138,000 | -- | -- | -- | -- | -- | 138,000 | -- | 138,000 |
| Development of east Park -N- Save lot | PD96-218C | 40,000 | 1 (b) | 41,000 | -- | -- | -- | -- | -- | -- | 41,000 | -- | 41,000 |
| Upgrade terminal entrance roadway | PD97-251 | 45,000 | 1 (b) | -- | 48,000 | -- | -- | -- | -- | -- | 48,000 | -- | 48,000 |
| | | \$610,000 | | \$41,000 | \$579,000 | \$27,000 | -- | -- | -- | -- | \$647,000 | -- | \$647,000 |
| SECURITY | | | | | | | | | | | | | |
| ARFF vehicle | PD88-031 | \$325,000 | 1 (b) | -- | \$345,000 | -- | -- | -- | -- | -- | \$345,000 | -- | \$345,000 |
| CCTV upgrades | PD89-018 | 545,000 | 1 (b) | -- | -- | 596,000 | -- | -- | -- | -- | 596,000 | -- | 596,000 |
| | | \$870,000 | | -- | \$345,000 | \$596,000 | -- | -- | -- | -- | \$941,000 | -- | \$941,000 |
| ENVIRONMENTAL | | | | | | | | | | | | | |
| Storm water structural improvements | PD96-229 | \$2,000,000 | 1 | -- | \$1,061,000 | \$1,093,000 | -- | -- | -- | -- | \$2,154,000.00 | -- | \$2,154,000 |
| Hazardous material storage buildings | PD97-255 | 14,000 | 1 (b) | 14,000 | -- | -- | -- | -- | -- | -- | 14,000 | -- | 14,000 |
| Fuel farm storm water detention structure | PD97-257 | 66,000 | 1 (b) | -- | 70,000 | -- | -- | -- | -- | -- | 70,000 | -- | 70,000 |
| | | \$2,080,000 | | \$14,000 | \$1,131,000 | \$1,093,000 | -- | -- | -- | -- | \$2,238,000 | -- | \$2,238,000 |
| Total | | \$82,095,000 | | \$2,189,000 | \$18,224,000 | \$16,095,000 | \$15,657,000 | \$16,295,000 | \$14,211,000 | \$6,254,000 | \$88,925,000 | \$17,463,000 | \$64,529,000 |

a. Projects costs except land are escalated at 3% per year.
b. Projects not included in the Master Plan Update are described in the Capital Improvement Program for Tucson International Airport.
c. Cost estimate includes demolition of three hangars.
Sources for cost estimates: Tucson Airport Authority and Urban Engineering.

Table S-8
PRELIMINARY FINANCIAL PLAN
Tucson Airport Authority
For Fiscal Years Ending September 30

| Sources of funds | Fiscal Year 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | Total |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|----------------------|
| Balance from previous year | -- | -- | \$11,408,000 | \$5,279,000 | -- | \$329,000 | (\$3,468,000) | \$13,548,000 |
| Sale of Airport Revenue Bonds (a) | -- | 28,818,000 | -- | -- | \$6,913,000 | -- | -- | 35,731,000 |
| Interest earnings during construction period (b) | | | | | | | | |
| Construction Fund | -- | \$795,000 | \$418,000 | \$133,000 | \$143,000 | (\$76,000) | (\$82,000) | \$1,331,000 |
| Bond Reserve Fund | -- | -- | -- | -- | -- | -- | -- | -- |
| Capitalized Interest | -- | 234,000 | 141,000 | 47,000 | 34,000 | 11,000 | -- | 467,000 |
| | -- | \$1,029,000 | \$559,000 | \$180,000 | \$177,000 | (\$65,000) | (\$82,000) | \$1,798,000 |
| Other sources | | | | | | | | |
| PFC revenues | -- | \$3,957,000 | \$5,554,000 | \$5,837,000 | \$6,050,000 | \$6,281,000 | \$6,506,000 | \$34,185,000 |
| Federal (AIP) entitlement grants | \$685,000 | \$1,944,000 | \$1,001,000 | \$1,030,000 | \$1,057,000 | \$1,085,000 | \$1,106,000 | 7,908,000 |
| Federal (AIP) discretionary grants | -- | 910,000 | 1,365,000 | 1,820,000 | 1,820,000 | 1,820,000 | 1,820,000 | 9,555,000 |
| State grants (c) | 721,000 | 1,130,000 | 1,138,000 | 1,145,000 | 1,802,000 | 965,000 | 30,000 | 6,931,000 |
| Authority capital funds | 783,000 | 332,000 | 349,000 | 366,000 | 384,000 | 404,000 | 424,000 | 3,042,000 |
| Other funds | -- | -- | -- | -- | -- | -- | -- | -- |
| Total sources of funds | \$2,189,000 | \$38,120,000 | \$21,374,000 | \$15,657,000 | \$18,203,000 | \$10,819,000 | \$6,336,000 | \$112,698,000 |
| <hr/> | | | | | | | | |
| Uses of funds | | | | | | | | |
| Total project costs | \$2,189,000 | \$18,224,000 | \$16,095,000 | \$15,657,000 | \$16,295,000 | \$14,211,000 | \$6,254,000 | \$88,925,000 |
| Capitalized Interest (d) | -- | 5,620,000 | -- | -- | 899,000 | -- | -- | 6,519,000 |
| Interim financing costs (e) | -- | -- | -- | -- | -- | 76,000 | 82,000 | 158,000 |
| Bond Reserve Fund | -- | 2,292,000 | -- | -- | 542,000 | -- | -- | 2,834,000 |
| Underwriter's discount and issuance expenses | -- | 576,000 | -- | -- | 138,000 | -- | -- | 714,000 |
| | \$2,189,000 | \$26,712,000 | \$16,095,000 | \$15,657,000 | \$17,874,000 | \$14,287,000 | \$6,336,000 | \$99,150,000 |
| Balance to carry forward (e) | -- | \$11,408,000 | \$5,279,000 | -- | \$329,000 | (\$3,468,000) | -- | \$13,548,000 |
| Total uses of funds | \$2,189,000 | \$38,120,000 | \$21,374,000 | \$15,657,000 | \$18,203,000 | \$10,819,000 | \$6,336,000 | \$112,698,000 |

- a. Assuming 6.5% interest and 30 year amortization period on Bonds issued at beginning of 1998 and 2001.
b. Assuming an interest rate of 5% for the Construction Fund and capitalized interest account.
c. Source (1998-2002): Arizona Department of Transportation, Tentative Five-Year Plan, March 1996.
d. Assuming 3 years of capitalized interest on 1998 bonds and 2 years of capitalized interest on 2001 bonds.
e. Negative balances to be interim-financed.

Table S-9

AIRLINE REVENUE REQUIREMENT
Tucson Airport Authority
For Fiscal Years Ending September 30

The projections presented in this table were prepared using information from the sources indicated and the assumptions provided by, or reviewed with and agreed to by, Airport management, as described in the accompanying text. Inevitably, some assumptions used to develop the projections will not be realized and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between the projected and actual results and those differences may be material.

| | Budget (a) | | Projected | | | | | | |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Debt service | | | | | | | | | |
| Airport Revenue Bonds | | | | | | | | | |
| 1990 Airport Revenue Bonds | \$1,639,960 | \$1,644,000 | \$1,640,000 | \$1,640,000 | \$1,640,000 | \$1,640,000 | \$1,640,000 | \$1,640,000 | \$1,640,000 |
| 1993 Refunding Revenue Bonds | 4,915,368 | 4,914,000 | 4,914,000 | 4,914,000 | 4,914,000 | 4,914,000 | 4,914,000 | 4,914,000 | 4,914,000 |
| Proposed 1998 Revenue Bonds (b) | -- | -- | -- | -- | -- | 2,292,000 | 2,292,000 | 2,292,000 | 2,292,000 |
| Proposed 2001 Revenue Bonds (c) | -- | -- | -- | -- | -- | -- | -- | 542,000 | 542,000 |
| | <u>\$6,555,328</u> | <u>\$6,558,000</u> | <u>\$6,554,000</u> | <u>\$6,554,000</u> | <u>\$6,554,000</u> | <u>\$8,846,000</u> | <u>\$8,846,000</u> | <u>\$9,388,000</u> | <u>\$9,388,000</u> |
| Coverage on Bonds @ 25% | \$1,638,832 | \$1,640,000 | \$1,639,000 | \$1,639,000 | \$1,639,000 | \$2,212,000 | \$2,212,000 | \$2,347,000 | \$2,347,000 |
| Total debt service requirement | <u>\$8,194,160</u> | <u>\$8,198,000</u> | <u>\$8,193,000</u> | <u>\$8,193,000</u> | <u>\$8,193,000</u> | <u>\$11,058,000</u> | <u>\$11,058,000</u> | <u>\$11,735,000</u> | <u>\$11,735,000</u> |
| Total Operation and Maintenance Expenses | \$18,717,535 | \$18,581,000 | \$19,510,000 | \$20,486,000 | \$21,510,000 | \$22,586,000 | \$23,715,000 | \$25,496,000 | \$26,771,000 |
| Fund replenishments | | | | | | | | | |
| Operation and Maintenance Reserve Account | \$222,762 | \$87,000 | \$232,000 | \$244,000 | \$256,000 | \$269,000 | \$282,000 | \$445,000 | \$319,000 |
| Bond Reserve Fund requirement (d) | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Capital Improvement Fund | 402,029 | 422,000 | 443,000 | 465,000 | 488,000 | 512,000 | 538,000 | 565,000 | 593,000 |
| Special Reserve Fund | 655,284 | 434,000 | 700,000 | 700,000 | 700,000 | 700,000 | 700,000 | 700,000 | 700,000 |
| Total fund replenishments | <u>\$1,280,075</u> | <u>\$943,000</u> | <u>\$1,375,000</u> | <u>\$1,409,000</u> | <u>\$1,444,000</u> | <u>\$1,481,000</u> | <u>\$1,520,000</u> | <u>\$1,710,000</u> | <u>\$1,612,000</u> |
| Adjustments | | | | | | | | | |
| 52% of Industrial Area net income | \$610,017 | \$653,000 | \$680,000 | \$699,000 | \$720,000 | \$742,000 | \$763,000 | \$785,000 | \$808,000 |
| Investment income from Special Reserve Fund | 391,129 | 436,000 | 440,000 | 440,000 | 440,000 | 440,000 | 440,000 | 440,000 | 440,000 |
| | <u>\$1,001,146</u> | <u>\$1,089,000</u> | <u>\$1,120,000</u> | <u>\$1,139,000</u> | <u>\$1,160,000</u> | <u>\$1,182,000</u> | <u>\$1,203,000</u> | <u>\$1,225,000</u> | <u>\$1,248,000</u> |
| Total expenses | <u>\$29,192,916</u> | <u>\$28,811,000</u> | <u>\$30,198,000</u> | <u>\$31,227,000</u> | <u>\$32,307,000</u> | <u>\$36,307,000</u> | <u>\$37,496,000</u> | <u>\$40,166,000</u> | <u>\$41,366,000</u> |

Table S-9 (page 2 of 2)
AIRLINE REVENUE REQUIREMENT
Tucson Airport Authority
For Fiscal Years Ending September 30

| | | Budget (a) | | Projected | | | | | | |
|--|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Less: deductions | | | | | | | | | | |
| Signatory Airline revenues (e) | [A] | \$7,147,800 | \$7,366,000 | \$7,442,000 | \$7,830,000 | \$7,911,000 | \$8,324,000 | \$8,412,000 | \$10,384,000 | \$10,478,000 |
| Nonsignatory airline revenues | [B] | 1,702,570 | 1,886,000 | 1,951,000 | 2,018,000 | 2,089,000 | 2,161,000 | 2,236,000 | 2,314,000 | 2,394,000 |
| Concession revenues | | 8,063,900 | 8,846,000 | 9,608,000 | 10,474,000 | 11,445,000 | 12,612,000 | 13,622,000 | 14,688,000 | 15,833,000 |
| Other operating revenues | | 6,299,151 | 6,688,000 | 6,849,000 | 7,017,000 | 7,189,000 | 7,368,000 | 7,552,000 | 7,745,000 | 7,943,000 |
| Interest income | | 930,529 | 971,000 | 1,005,000 | 1,040,000 | 1,076,000 | 1,114,000 | 1,153,000 | 1,193,000 | 1,235,000 |
| Cost of goods sold | | (1,388,456) | (1,488,000) | (1,562,000) | (1,640,000) | (1,722,000) | (1,808,000) | (1,898,000) | (1,993,000) | (2,093,000) |
| Total operating income | | \$22,755,494 | \$24,269,000 | \$25,293,000 | \$26,739,000 | \$27,988,000 | \$29,771,000 | \$31,077,000 | \$34,331,000 | \$35,790,000 |
| Net expenses | | \$6,437,422 | \$4,542,000 | \$4,905,000 | \$4,488,000 | \$4,319,000 | \$6,536,000 | \$6,419,000 | \$5,835,000 | \$5,576,000 |
| Less: | | | | | | | | | | |
| Short term proceeds | | \$650,000 | -- | -- | -- | -- | -- | -- | -- | -- |
| Airline Reserve Fund | | 1,639,096 | \$1,639,000 | \$1,640,000 | \$1,639,000 | \$1,639,000 | \$1,639,000 | \$2,212,000 | \$2,212,000 | \$2,347,000 |
| Earned income in excess of budget estimate | | 1,121,639 | (6,000) | -- | -- | -- | -- | -- | -- | -- |
| | | \$3,410,735 | \$1,633,000 | \$1,640,000 | \$1,639,000 | \$1,639,000 | \$1,639,000 | \$2,212,000 | \$2,212,000 | \$2,347,000 |
| Airline revenue requirement (to be paid from Landing Fees) | [C] | \$3,026,687 | \$2,909,000 | \$3,265,000 | \$2,849,000 | \$2,680,000 | \$4,897,000 | \$4,207,000 | \$3,623,000 | \$3,229,000 |
| Enplaned passengers | [D] | 1,888,000 | 2,009,000 | 2,126,000 | 2,238,000 | 2,352,000 | 2,438,000 | 2,530,000 | 2,621,000 | 2,714,000 |
| Total airline payments per enplaned passenger | | | | | | | | | | |
| | [A+B+C]/[D] | \$6.29 | \$6.05 | \$5.95 | \$5.67 | \$5.39 | \$6.31 | \$5.87 | \$6.23 | \$5.93 |

-
- a. Source: Tucson Airport Authority.
 - b. Interest is capitalized through 2000.
 - c. Interest is capitalized through 2002.
 - d. Assumed to be fully funded from Bond proceeds.
 - e. Excludes Signatory Airline landing fees.

The net airline revenue requirement, as shown in Table S-9, is projected to increase from \$3.0 million in FY 1996 to \$3.2 million in FY 2004. Total airline payments from space rentals, landing fees, and other charges are projected to decrease from \$6.29 per enplaned passenger in FY 1996 to \$5.93 per enplaned passenger in FY 2004.

The financial analysis shows that the implementation of the PAL 1 and PAL 2 master plan projects is financially feasible on the basis of the information and assumptions used, subject to approval by a majority-in-interest of the airlines. Such approval would permit the issuance of bonds under the provisions of the Bond Resolution and the Use Agreements, thereby providing the funds to support the financial requirements of the recommended projects.

Long-Term Funding

Beyond 2003, that development of the Airport will continue as required to meet the needs of increased demand levels consistent with future funding sources available to the Authority at the time of implementation. The financial feasibility of future projects will be determined by the provisions of the Bond Resolution and the Use Agreements (and any successor agreements), and by funding levels and participation rates of federal and State grants-in-aid programs.

SUMMARY OF PLANNING GUIDELINES

Table S-10 provides a summary of considerations regarding each of the planning guidelines as addressed in the recommended Master and Land Use Plan and agreed upon at the beginning of the project when the goals and objectives were formulated.

| <p style="text-align: center;">Table S-10</p> <p style="text-align: center;">CONSIDERATION OF PLANNING GUIDELINES— RECOMMENDED MASTER AND LAND USE PLAN</p> <p style="text-align: center;">Tucson International Airport</p> | |
|--|--|
| PLANNING GUIDELINE | COMMENTS |
| Airport Role | |
| 1. Primary—air carrier, including air cargo | Met |
| 2. Secondary—Arizona Air National Guard and general aviation | Met |
| Aviation Activity Forecasts | |
| 3. Use planning activity levels | Used to establish requirements and phasing plan |
| 4. Protect site for ultimate development | Met |
| 5. Consider changes in airline service patterns and airfares | Considered in forecasts |
| 6. Consider potential increase in passengers between Tucson and Mexico | Considered in forecasts |
| 7. Consider potential increase in cargo and intermodal transportation associatedw with NAFTA | Considered in forecasts |
| Airfield Capacity/Development | |
| 8. Reserve sites for up to three new parallel runways | Third new parallel runway to the southeast for general aviation not needed for recommended plan |
| 9. Coordinate activities with Davis-Monthan AFB | Met |
| 10. Sequence runway construction on the basis of defined criteria | Met |
| 11. Consider ultimate length of Runway 11L-29R | Additional runway length determined not to be needed |
| 12. Consider crosswind runway requirements | No additional crosswind runways required—improved runway exits and taxiway access addressed |
| 13. Provide flexibility for technological advances/tower relocation | Met—tower relocation required regardless of recommended plan |
| Passenger Terminal Complex | |
| 14. Provide for ultimate development at a midfield site | Met—land reserved for future terminal relocation |
| 15. Consider changes in airline requirements | Terminal area requirements reflect changes in airline needs |
| 16. Maintain flexibility to accommodate different aircraft types | Use of swing gates for international flights and use of jet parking positions for commuter aircraft—future terminal design would address specific requirements |
| Airport Access and Parking | |
| 17. Maintain primary access via South Tucson Boulevard | Maintained throughout planning period |
| 18. Provide for future transit facilities | Terminal concept would accommodate bus, rail, or other transit mode |
| 19. Provide access to northeast area including multimodal facilities | Met |
| 20. Provide intermodal facilities to maximize cargo potential from NAFTA | Met—appropriate land uses identified |
| 21. Provide for a variety of automobile parking options | Met—short- and long-term parking accommodated on Airport property |
| Overall Land Use | |
| 22. Place highest priority on land required for aviation needs | Met |
| 23. Consider providing land for aviation compatible uses for remaining land | Met |
| Environmental Impacts | |
| 24. Minimize adverse environmental impacts | Close parallel runway as initial runway minimizes environmental effects |
| Financial Resources | |
| 25. Establish phasing consistent with need and financial capabilities | Met |
| 26. Consider all potential sources of financing | Met—may change as part of planning for specific facilities |